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NIH Expands Biomedical Research in the Cloud with Microsoft Azure

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Microsoft Azure has joined the National Institutes of Health's (NIH) **Science and Technology Research Infrastructure for Discovery, Experimentation, and Sustainability (STRIDES) Initiative** as the newest cloud service provider to support biomedical research. The addition of this latest industry partner will further the STRIDES Initiative's aim to accelerate biomedical research in the cloud by reducing economic and process barriers as well as providing cost-effective access to cloud platforms, training, cloud experts, and best practices for optimizing research in the cloud.

In just a few years, the STRIDES Initiative has expanded access to critical infrastructure and cutting-edge cloud resources for NIH researchers, as well as NIH-funded researchers at more than 2,500 academic institutions across the nation. To date, NIH has helped more than 425 research programs and projects leverage cloud resources through the STRIDES Initiative. Collectively, researchers have used more than 83 million hours of computational resources to access and analyze more than 115 petabytes of high-value biomedical data in the cloud. This is equivalent to 2.3 million four-drawer filing cabinets full of text.

By leveraging the STRIDES Initiative, the National Library of Medicine's **Sequence Read Archive** **(SRA)** — one of the world's largest, publicly available genome sequence repositories—migrated over 43 petabytes of "next generation" sequencing data to the cloud, easing access for millions of researchers. Using the cloud, researchers can now search the entire catalog of genomic data and take advantage of the computational tools for analysis.

"The cloud can help democratize access to high-value research data and the most advanced analytical technologies for all researchers. Expanding our network of providers and access to the most advanced computational infrastructure, tools, and services provides the agility and flexibility that researchers need to accelerate research discoveries," said Andrea T. Norris, Director of NIH's Center for Information Technology and NIH Chief Information Officer. "Partnering with Microsoft Azure as a cloud service provider furthers our goals to enhance discovery and improve efficiency in biomedical research."

"We often risk losing the value of biomedical data because of the sheer volumes being generated and digitized around the world. By leveraging cloud and artificial intelligence capabilities, biomedical researchers are able to quickly identify and extract critical, lifesaving insights from this sea of information," said Toni Townes-Whitley, President, U.S. Regulated Industries, Microsoft. "We are honored to collaborate with the NIH to help researchers solve some of today's biggest medical challenges, in support of a healthier and more sustainable global population."

A central tenet of the STRIDES Initiative is that data made available through these partnerships will incorporate standards endorsed by the biomedical research community to make data Findable, Accessible, Interoperable, and Reusable (FAIR).

"NIH has an ambitious vision of a modernized, FAIR biomedical data landscape," said Susan K. Gregurick, Ph.D., Associate Director for Data Science and Director of the Office of Data Science Strategy at NIH. "By partnering with Microsoft Azure, which has over three decades of experience in the cloud space, we can strengthen NIH's data ecosystem and accelerate data-driven research and discovery."

Microsoft Azure joins Google Cloud and Amazon Web Services in supporting the STRIDES Initiative.

About the NIH Office of Data Science Strategy: The Office of Data Science Strategy (ODSS) leads implementation of the NIH Strategic Plan for Data Science through scientific, technical, and operational collaboration with the institutes, centers, and offices that comprise NIH. The office was formed in 2018 within the Division of Program Coordination, Planning, and Strategic Initiatives, which plans and coordinates trans-NIH initiatives and research supported by the NIH Common Fund. More information is available at the Office of Data Science Strategy website: datascience.nih.gov.

About the National Institutes of Health (NIH): NIH, the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit nih.gov.

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